interchange information with vehicle- internal systems via the interface. In this case, on the one hand, vehicle-internal systems can activate the components of the night vision system while, on the other hand, individual components of the night vision system can also transmit control signals to vehicle-internal systems.

[0014] By way of example, a navigation appliance which is fitted in the vehicle can activate the night vision system automatically at the appropriate time when the vehicle is approaching a tunnel, and shortly before driving into the tunnel, on the basis of information from digital maps.

[0015] The image data which is detected by means of the camera of the night vision system (with the camera advantageously being located in the area which is cleaned by the windshield and/or headlight cleaning system) can be evaluated in order to detect dirt on the windshield or headlights, and then to transmit a control signal to the control unit for the windshield and headlight cleaning system, and to activate the headlight cleaning system. The configuration of the night vision system need not include an optical display for this purpose.

[0016] A further option is for the image processing unit to transmit a control signal to the control unit for the airbag devices on the basis of a danger situation having been identified, and in this way to preactivate these devices.

[0017] In principle, it is feasible to transmit control signals from the night vision system to warning devices, in which case, for example, the warning signal may also be represented by means of a spoken output.

[0018] It is particularly advantageous for the optical display to be automatically deactivated if the image data produced by the image processing unit is not automatically updated within a fixed predetermined time interval. Otherwise, the driver would be unnecessarily irritated by the displayed image not following the area surrounding the vehicle but being displayed as a stationary image. Alternatively, it would also be feasible, instead of deactivating the optical display, to deliberately display a fault message on the optical display. In order to allow such functionality, the control signal is in this case represented by the image

data produced by the image processing. The control signal thus changes with the change in the displayed image data. If this control signal does not change within a predetermined time interval, this initiates the deactivation of the optical display.

[0019] In one advantageous embodiment of the invention, the night vision system is designed such that, in the situation where the control signal for operation of the night vision system is not requested automatically by vehicle-internal systems, but is requested manually by the driver, a change takes place in any case to the night vision display on the display unit. However, this is also the case when other conditions which are required for operation of the night vision system are not satisfied. For example, in this case as well, a change takes place to the night vision display when the vehicle is not moving and, in consequence, the infrared illumination cannot be activated for safety reasons. It is thus obvious to the driver that all of the necessary conditions for correct operation of all of the components of the night vision system are not satisfied, and that this is not a malfunction of the night vision system.

[0020] In a further advantageous refinement of the invention, it is feasible for all of the individual components, in particular the illumination unit and the image recording unit, of the night vision system to be used in order to communicate in the infrared wavelength band with other vehicles or traffic facilities. In this case, it is particularly advantageous for the night vision system to be configured such that it does not have an optical display. In this case, the optical display is not switched on, and the driver is thus not disturbed.

[0021] In addition, in the situation where vehicle-internal systems generate a control signal for operation of individual components of the night vision system, all of the components of the night vision system are included in the configuration, with the exception of the optical display. For example, a system which is based on radar signal processing for spacing control, or an image processing system for object identification, can request the functionality of the night vision system, with no optical display being required in this case, and thus without the driver being distracted.

[0022] In situations in which a configuration which includes the optical display has already been active and communication is intended to be set up with other vehicles or traffic

facilities or with vehicle-internal systems, the optical display remains in that configuration, and is not removed.

[0023] A request for the night vision functionality may be requested both manually by the driver and by vehicle-internal systems. It is advantageous for the night vision system to be configured in such a way that it is activated in any case in the event of a request such as this for the night vision functionality. The components of the night vision system are also activated in circumstances in which no night vision functionality would be required; for example during the daytime or when the vehicle is stationary. The IR illumination unit is, however, switched on only as a function of other operating conditions, in order not to endanger other road users. The operating conditions for infrared illumination include dipped headlights having to be switched on, since the night vision system is otherwise not required. Furthermore, the vehicle must be moving at a predetermined minimum speed in order that no one can look directly into the IR illumination unit for a long time. However, for diagnosis purposes, the IR illumination unit can also be switched on separately by means of a special facility, when stationary.

[0024] In a further embodiment of the invention which results in an improvement, the night vision system may be configured such that all of the components can be activated individually, independently of the operating conditions. This is advantageous, for example, when a control signal for activation of the components of the night vision system is generated by means of vehicle-external diagnosis systems in workshops. The information interchange with vehicle-external diagnosis systems in this case takes place via vehicle-internal systems.

BRIEF DESCRIPTION OF THE DRAWING

[0025] The single figure shows the schematic layout of an automobile night vision system.

DETAILED DESCRIPTION OF THE INVENTION

[0026] By way of example, the figure shows the schematic layout of an automobile night

vision system. In this case, the night vision system comprises an illumination unit (1) for illumination of the area surrounding the vehicle with infrared light. An image recording unit (2) which has a receiver which receives in the infrared wavelength band is used for scanning the area surrounding the vehicle, and for then converting this information to image data. The night vision system furthermore has an image processing unit (3), by means of which the image data can be evaluated and can be preprocessed for optical display. For optical display purposes, the night vision system is equipped with a display unit (4) which projects the image data onto the front windshield, for example, or presents it on a display in the cockpit of the vehicle. For information interchange with other components, an interface (5) to vehicle-internal systems is also provided.